

Remarks/Arguments

Claims 1, 8, 9 12 and 13 have been amended.

The Examiner has rejected applicant's claims 1-14 under 35 USC 103(a) as unpatentable based on the Choi, et al. patent (US Patent No. 6,285,408) taken in view of the Hayashi, et al. patent (US Patent No. 6,825,948) and in further view of the Tajima, et al. patent (US Patent No. 6,249,265). With respect to applicant's claims, as amended, these rejections are respectfully traversed.

Applicant's independent claims have been amended to better define applicant's invention. More particularly amended independent claim 1 recites an image processing apparatus comprising: a reception unit adapted to receive at least three encoded image data; a decoding unit adapted to decode one of the encoded image data to generate a main frame; a sub frame generation unit adapted to extract low frequency component from each one of the other encoded image data without fully decoding the other encoded image data, and generate sub frames using the low frequency components extracted from the other encoded image data; and an image signal generation unit adapted to combine the main frame and the generated sub frames, and generate an image signal including the main frame combined with the generated sub frames. Corresponding method claim 8 has been similarly amended.

Such a construction is not taught or suggested by the cited art of record. In particular, the Examiner has cited FIG. 4 of the Choi, et al. patent and has stated that "Figure 4 shows the outputting means for outputting a main frame and a sub frame." However, from a careful review of this figure and the description of this figure in the Choi, et al. patent at column 2, lines 36-50, there is nothing shown or mentioned as to a means for outputting a main frame and a sub frame, as the Examiner has stated. FIG. 4 simply shows a system for integrating an HDTV receiver, a DVCR and a DVD player via an IEEE 1994 standard transport/program bit

stream interface, but again nothing is discussed as to a means for outputting a main frame and a sub frame.

The only portion of the Choi, et al. patent that mentions the formation of a main frame and a sub frame is directed to the system in FIG. 5. This system is described in column 4, lines 35-43, of the patent which state, in part, that the “VDP and copy protection unit 105 may have a Picture In Picture (PIP) function to selectively display a HD class image and a SD class image in a main frame and in a sub-frame when a user selects a function requiring two images to be displayed on the HD monitor 107.” As is evident from FIG. 5, the VDP and copy protection unit 105 acts on HD class video and SD class video after the video streams VS1 and VS2 have been fully decoded by the HD-Video Decoder 104 and SD-Video Decoder 204.

Thus, the Choi, et al. patent teaches forming the HD main frame signal and SD sub-frame signal from the fully decoded video signals. The patent therefore cannot to teach or suggest “a sub frame generation unit adapted to extract low frequency component from each one of the other encoded image data without fully decoding the other encoded image data, and generate sub frames using the low frequency components extracted from the other encoded image.” As previously stated, the sub frame generation unit in the Choi, et al. patent, i.e., the VDP and copy protection unit 105, generates the SD sub-frame from the SD class video after the video stream VS2 has been fully decoded.

Moreover, neither of the other cited patents, i.e., Hayashi, et al. and Tajima, et al., teaches or suggests such a sub frame generation unit. In the Hayashi, et al. patent an imaging device 15 senses the image on the frames of a film 10 and these images are converted into digital images of three colors and stored in frame memories 17 of an image processing section 16. This data is read out from the frame memories while being decimated and is processed in

the image processing section 16 so as to display a video image on a CRT 18. An operator can correct the density and color of the data via a keyboard 19 and the image processing section 16 corrects the image data for viewing by the operator. If the correction is satisfactory, the image data is read out from the frame memories using the finally entered correction values and the corrected data is stored in an image data file 25. Col. 2, line 46 through Col. 3, line 26.

It is the image data from the image data file 25 that is used by the system in the Choi, et al. patent to form a main frame and sub frames. Col. 3, lines 56-62, Col. 4, lines 6-8 and Col. 4, lines 34-43. Thus, there is no teaching or suggestion in the Choi, et al. patent of encoded data nor can there, therefore, be any teaching or suggestion of a “sub frame generation unit adapted to extract low frequency component from each one of the other encoded image data without fully decoding the other encoded image data, and generate sub frames using the low frequency components extracted from the other encoded image data.” Choi, et al. merely uses image data scanned from film that has been decimated, corrected and stored in an image file to form main and sub frames and does not extract portions of encoded image data without fully decoding the data and use the extracted portions to form sub frames.

Finally, the Tajima, et al. patent mentions that the system disclosed therein receives “externally applied inputs, such as display signals . . . and a dot clock signal (CLOCK), via a display data pre-processor section 43 and storing them into, for example, a frame memory 71 . . .” Col. 3, lines 34-43. Accordingly, there is there no mention of encoded data, let alone is there a teaching or suggestion of a “sub frame generation unit adapted to extract low frequency component from each one of the other encoded image data without fully decoding the other encoded image data, and generate sub frames using the low frequency components extracted from the other encoded image data.”

Each of the cited Choi, et al., Hayashi, et al. and Tajima, et al. patents thus fail to teach or suggest the applicant's claimed sub generation unit. The combined patents thus fail to teach or suggest applicant's claimed invention.

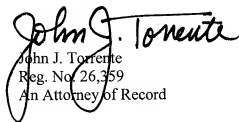
In view of the above, it is submitted that applicant's claims 1 and 8, as amended, and their respective dependent claims, patentably distinguish over the cited art of record.

Accordingly, reconsideration of the claims is respectfully requested.

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Respectfully submitted,

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